

REMARKS

Claims 1-28 were pending prior to the entry of these amendments. Claims 21-24 were previously withdrawn. Claims 1-4, 7-11, 13-20, 25 and 28 are amended herein. Claims 5-6, 12 and 26-27 have been canceled without prejudice or disclaimers. New Claim 29 has also been added. Claims 1-4, 7-11, 13-20, 25 and 28-29 therefore remain pending.

Many of the amendments result from incorporation of limitations from the previously pending claims. As such, support for these amendments can be found in these claims, as originally filed. Support for the amendment to Claim 1, relating to $2R \leq D \leq 60R$ can be found in the specification as filed at Paragraph [0057]. The upper end of this range is specifically mentioned separately from the lower end of the range. Accordingly, the specification provides support for both ends of this range.

Objections to Claim 1

The Office Action objected to Claim 1 for minor informalities. In response, the Applicants have corrected the phrase “having refractive-index property” to “having a refractive-index property”. Accordingly, Applicants respectfully request withdrawal of the objection to Claim 1.

Rejection Under 35 U.S.C. § 112

The Office Action rejected Claims 15 and 27 under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

By this amendment, Applicants have canceled Claim 27 without prejudice or disclaimer.

Specifically, Claim 15 was rejected because, the Claim limitations “the supporting member” and “the split sleeve” had insufficient antecedent basis in the Claim.

Claim 15 has been amended herein, without altering its scope, to provide sufficient antecedent basis to the Claim limitations “the supporting member” and “the split sleeve”. These Claim amendments are not made for patentability purposes, and it is believed that the Claims would satisfy the statutory requirements for patentability without the entry of such clarifications. Withdrawal of the rejection of Claim 15 under 35 U.S.C. § 112, second paragraph is requested.

Applicants respectfully request the Examiner to withdraw the rejection of Claim 15 under 35 U.S.C. § 112, second paragraph.

Rejection Under 35 U.S.C. § 102

Rejection Under 35 U.S.C. § 102

The Office Action rejected Claims 1, 3-7, 9, 10, 12, 13, 17-19, 26 and 28 under 35 U.S.C. § 102(b) as being anticipated by Japanese Publication No. 2001-124958, by Yasuhiro et. al. Applicants respectfully traverse this rejection because Yasuhiro fails to identically teach every element of the rejected Claims.

Claim 1

Claim 1 is amended herein to recite *inter alia* an optical connection structure comprising a solid sheet-shaped viscous connection member that is adheringly disposed in a single layer state between the end faces of mutually opposing optical transmission media or between the end face of an optical transmission medium and an optical component that are mutually opposing. The viscous connection member is disposed such that the minimum value D of the distance from the center of the end face of the optical transmission medium, having a radius R and contacting said viscous connection member, and the periphery of said viscous connection member is within the range $2R \leq D \leq 60R$.

Yasuhiro et. al. does not teach or remotely suggest that the minimum value D of the distance from the center of the end face of the optical transmission medium should be $\geq 2R$ in which R is the radius of the transmission medium. Moreover, Yasuhiro et. al. does not provide any reason for the minimum value D to be within the disclosed range.

Applicants have discovered that the disclosed range for the minimum value D of the distance from the center of the end face of the optical transmission medium to the periphery of the viscous connection member allows the sheet-shaped viscous member to change its shape flexibly while adhering to the optical transmission media or an optical component. As pointed out in Paragraph [0057] of Applicants' specification, if the value of D is greater than 60R then the deformation of the viscous connection member increases due to the projection of optical fibers and floppiness and wrinkling can occur over the entire member. This can cause the viscous connection member to break and make it difficult to achieve stable connection. On the other hand if the value of D is less than 2R then the viscous connection member may not adhere over the entire surface of the optical fiber and may result in an increase in transmission loss.

Thus the range for the minimum value D of the distance from the center of the end face of the optical transmission medium to the periphery of the viscous connection member disclosed in Claim 1 is the range over which the benefits of the invention are realized. Applicants respectfully

submit that it would not have been obvious from Yasuhiro et. al. or other references on record to anticipate this range. In light of the above discussion, Applicants respectfully submit that Claim 1 is patentable distinguishable over Yasuhiro et. al. and is therefore allowable.

Claims 3-4, 7, 9-10, 13, 17-19 and 28

Claims 3-4, 7, 9-10, 13, 17-19 and 28 ultimately depend from Claim 1. As such, these claims include all the features of Claim 1, and also recite unique combinations of additional features not taught or suggested by Yasuhiro et. al.. As discussed above Claim 1 is patentable over Yasuhiro et. al. Therefore, Applicants submit that these dependent claims are also patentable over Yasuhiro et. al. Thus, Applicants respectfully request that the Examiner withdraw the rejections to these dependent claims and allow them to issue.

Rejection Under 35 U.S.C. § 103

The Office Action rejects Claims 2, 8 and 25 under 35 U.S.C. § 103(a) as being anticipated by Japanese Publication No. 2001-124958, by Yasuhiro et. al. Applicants respectfully traverse this rejection because Yasuhiro fails to identically teach every element of the rejected Claims.

Claim 2

Claim 2 depends from Claim 1 and includes all the features of Claim 1, and also recites unique combinations of additional features not taught or suggested by Yasuhiro et. al.. As discussed above Claim 1 is patentable over Yasuhiro et. al. Therefore, Applicants submit that Claim 2 is also patentable over Yasuhiro et. al. Thus, Applicants respectfully request that the Examiner withdraw the rejections to Claim 2 and allow it to issue.

Claim 8

Applicants have rewritten Claim 8 in an independent form to recite *inter alia* an optical connection structure comprising a solid sheet-shaped viscous connection member that is adheringly disposed in a single layer state between the end faces of mutually opposing optical transmission media or between the end face of an optical transmission medium and an optical component that are mutually opposing. The viscous connection member is disposed such that the minimum distance D_1 from the center of the core of the optical transmission medium to the periphery of the viscous connection member is greater than or equal to the radius 'r' of the core of the optical transmission medium, and the maximum distance D_2 from the center of the core of

the optical transmission medium to the periphery of the viscous connection member satisfies the relation $D_2 \leq 1.5R$, where R is the radius of the optical transmission medium.

Yasuhiro et. al. does not teach or remotely suggest that the minimum distance D_1 from the center of the core of the optical transmission medium to the periphery of the viscous connection member is greater than or equal to the radius 'r' of the core of the optical transmission medium, and the maximum distance D_2 from the center of the core of the optical transmission medium to the periphery of the viscous connection member satisfies the relation $D_2 \leq 1.5R$, where R is the radius of the optical transmission medium. Moreover, Yasuhiro et. al. does not provide any reason for the minimum distance D_1 and the maximum distance D_2 of the distance from the center of the core of the optical transmission medium to the periphery of the viscous connection member to be within the disclosed range.

As described in Paragraph [0067] of the specification, Applicants have discovered that the range occupied by the viscous connection member as disclosed in Claim 8 prevents contamination, reduces dust attachment and improves ease of handling. Additionally, if the value of D_1 is smaller than the radius 'r' of the core of the optical transmission medium then there can be an increase in optical transmission loss in the areas of the core not contacted by the viscous connection member. On the other hand if the value of D_1 is greater than 1.5R then the viscous connection member not contacting the end face can become large thus increasing attachment of dust. In this condition, the viscous connection member can also contact other components and good connection performance may not be maintained.

Thus the range for the minimum distance D_1 and maximum distance D_2 from the center of the core of the optical transmission medium to the periphery of the viscous connection member disclosed in Claim 8 is the range over which benefits of the invention are realized. Applicants respectfully submit that it would not have been obvious from Yasuhiro et. al. or other references on record to anticipate this range. In light of the above discussion, Applicants respectfully submit that Claim 8 is patentable distinguishable over Yasuhiro et. al. and is therefore allowable.

Claim 25

Claim 25 depends from Claim 8 and includes all the features of Claim 8, and also recites unique combinations of additional features not taught or suggested by Yasuhiro et. al. As discussed above Claim 8 is patentable over Yasuhiro et. al. Therefore, Applicants submit that

Claim 25 is also patentable over Yasuhiro et. al. Thus, Applicants respectfully request that the Examiner withdraw the rejections to Claim 2 and allow it to issue.

Claims 11, 14-16, 20 and 27

The Office Action rejects Claims 11, 14-16, 20 and 27 under 35 U.S.C. § 103(a) as being anticipated by Japanese Publication No. 2001-124958, by Yasuhiro et. al. further in view of U.S. Patent No. 5,647,042 by Ochiai et. al. Applicants respectfully traverse this rejection because the cited referenced fail to identically teach every element of the rejected Claims.

Claims 11, 14-16 and 20 ultimately depend from Claim 1. As such, these claims include all the features of the claim they depend from, and also recite unique combinations of additional features not taught or suggested by the cited references. As discussed above Claim 1 is patentable over Yasuhiro et. al.

Ochiai et. al. does not make up for the deficiencies of Yasuhiro et. al. because Ochiai et. al. does not teach or even remotely disclose the minimum value D of the distance from the center of the end face of the optical transmission medium, having a radius R and contacting said viscous connection member, and the periphery of said viscous connection member is within the range $R < D \leq 60R$. Thus Claim 1 is patentable over Yasuhiro et. al. further in view of Ochiai et. al. Therefore, Applicants submit that the dependent Claims 11, 14-16 and 20 are also patentable over Yasuhiro et. al. further in view of Ochiai et. al. Thus, Applicants respectfully request that the Examiner withdraw the rejections to the dependent claims 11, 14-16 and 20 and allow them to issue.

New Claim

Claim 29 has been added and is fully supported by the application as originally filed. Claim 29 depends from Claim 8 and includes all the features of the claim they depend from, and also recites unique combinations of additional features not taught or suggested by the cited references. Applicants respectfully submit that Claim 29 is patentable over Yasuhiro et.al. and other cited references on record for at least the reasons discussed above. Thus, Applicants humbly request the Examiner to allow Claim 29 to issue.

CONCLUSION

In view of the foregoing, all of the pending claims are believed to be fully in condition for allowance. Should any impediments to the prompt allowance of the application be noted by the Examiner, the Examiner is respectfully invited to contact the undersigned at the telephone appearing below.

No fees are believed due; however, please charge any necessary fees, including any fees for extension of time to Deposit Account No. 11-1410.

Respectfully submitted,

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